

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A system for injecting, into an amplifier fiber, pumping signals from multiple pumping sources at different wavelengths, the system comprising: an output via which a transmission signal that is amplified by the amplifier fiber exits said system.

a first pumping signal source supplying a first pumping signal,

a first circulator with a first input connected to the first pumping signal source, a second input supplying the first pumping signal from the first pumping signal source and receiving the transmission signal, and a third input supplying the transmission signal to said output,

a second pumping signal source supplying a second pumping signal, and

a second circulator with a first input connected to the second signal source via reflector means for reflecting the first pumping signal signals from the first pumping signal source, a second input supplying the first and second pumping signals from the first and second pumping signal sources and receiving the transmission signal, and a third input connected to a second input of the first circulator, receiving the first pumping signal from the first circulator and supplying the transmission signal to the first circulator.

Claim 2 (currently amended): A system according to claim 1, further including:

a third pumping signal source supplying a third pumping signal, and

a third circulator with a first input connected to the third signal source via reflector means for reflecting the first and second pumping signals from the first source and the second pumping signal sources, a second input supplying the first, second, and third pumping signals from the first, second and third pumping signal sources and receiving the transmission signal, and a third input connected to the second input of the second circulator, receiving the first and second

pumping signals from the second circulator and supplying the transmission signal to the second circulator.

Claim 3 (currently amended): A system according to claim 2, further including:
an nth pumping signal source supplying an nth pumping signal,
an nth circulator with a first input connected to the nth pumping signal source via reflector means for reflecting pumping signals from pumping sources of rank less than n, where n is an integer varying from 4 to M and M is the total number of pumping sources injected, a second input supplying the pumping signals from the pumping signal sources of rank 1 to n and receiving the transmission signal, and a third input connected to the second input of the circulator of rank n-1, receiving the pumping signals of rank 1 to n-1 and supplying the transmission signal to the circulator of rank n-1.

 Claim 4 (canceled).

Claim 5 (original): The system claimed in claim 1, wherein the reflector means comprise Bragg gratings.

Claim 6 (currently amended): An amplifier comprising a system according to claim 1 and the amplifier fiber, [[for]] said system injecting the first and second pumping signals and an into an end of the amplifier fiber connected to the second output input of the highest rank said second circulator, wherein the transmission signal is supplied to an other end of the amplifier fiber.

Claim 7 (original): An amplifier according to claim 6, wherein the amplifier fiber is a line fiber.

Claim 8 (original): An amplifier according to claim 6, wherein the amplifier fiber is not a line fiber.

Claim 9 (original): An amplifier according to claim 6, wherein amplification is effected in the amplifier fiber by stimulated Raman scattering.

Claim 10 (original): A fiber optic transmission system comprising an amplifier according to claim 6.

Claim 11 (new): An amplifier comprising a system according to claim 2 and the amplifier fiber, said system injecting the first, second, and third pumping signals into an end of the amplifier fiber connected to the second input of said third circulator, wherein the transmission signal is supplied to an other end of the amplifier fiber.

Claim 12 (new): An amplifier comprising a system according to claim 3 and the amplifier fiber, said system injecting the pumping signals of rank 1 to n into an end of the amplifier fiber connected to the second input of the circulator of rank M, wherein the transmission signal is supplied to an other end of the amplifier fiber.

Claim 13 (new): A receiver terminal comprising a system according to claim 1 and a receiver, said receiver receiving the transmission signal from said output.

Claim 14 (new): A receiver terminal according to claim 13, wherein no signal from the receiver reaches the third input of the first circulator.

Claim 15 (new): An amplifier according to claim 6, further comprising an isolator at said other end of the amplifier fiber where the transmission signal is supplied, preventing subsequent propagation of the first and second pumping signals.